

## STAFF SUMMARY SHEET

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	DFM	sig	<i>Petty, Lt Col, 8 Jul 14</i>	6			
2	DFER	approve	<i>Soln, 1522, 9 Jul 14</i>	7			
3	DFM	action	<i>Don CIV 7 JUL 2014</i>	8			
4				9			
5				10			

SURNAME OF ACTION OFFICER AND GRADE

Davis, Civ

SYMBOL

DFM

PHONE

333-4130

TYPIST'S

INITIALS

kjd

SUSPENSE DATE

SUBJECT

Clearance for Material for Public Release

USAFA-DF-PA- 380

DATE

20140707

## SUMMARY

1. PURPOSE. To provide security and policy review on the document at Tab 1 prior to release to the public.

## 2. BACKGROUND.

Authors: Kevin J. Davis; William W. Jennings

Title: The Mogador Trust

Circle one: Abstract    Tech Report    Journal Article    Speech    Paper    Presentation    Poster

Thesis/Dissertation

Book

Other:

Case Study

Check all that apply (For Communications Purposes):

☐ CRADA (Cooperative Research and Development Agreement) exists☐ Photo/ Video Opportunities☐ STEM-outreach Related☐ New Invention/ Discovery/ Patent

Description: This case examines decision making within a private trust. Many of the issues for this small trust are immediately applicable to larger trusts, as well as local and state pension funds. Taking the perspective of finance expert Paula Douglas, students must address asset allocation and the selection of investment managers. Critically, decisions must be made in a realistic environment, where the investment management team has real biases, and limited investment knowledge. In their role as Paula, students will need to navigate political and ethical obstacles.

Release Information: Submission to (journal name; conference name, date, place, etc.)Journal of Finance Case Studies

Previous Clearance information: None.

Recommended Distribution Statement: Distribution A: approved for public release, distribution unlimited

3. DISCUSSION. No data on military policy, processes or technologies included.

4. RECOMMENDATION. Recommend approval for Distribution A.



Kevin J. Davis

Director of Assessment

Department of Management

poed's disclaimer



# THE MOGADOR TRUST: APPLYING INVESTMENT CONCEPTS TO PRIVATE FOUNDATIONS

Kevin J. Davis, United States Air Force Academy  
William W. Jennings, United States Air Force Academy

*This case examines decision making within a private trust. Many of the issues for this small trust are immediately applicable to larger trusts, as well as local and state pension funds. Taking the perspective of finance expert Paula Douglas, students must address asset allocation and the selection of investment managers. Critically, decisions must be made in a realistic environment, where the investment management team has real biases, and limited investment knowledge. In their role as Paula, students will need to navigate political and ethical obstacles.*

In early January of 2014, Paula Douglas walked into the private dining room at the Calusa Pines Golf Club near Naples, Florida; Frank Sides rose to greet her. Paula had met Frank six months prior at a fund-raising luncheon at the university where Paula taught finance. Frank was very impressed by Paula's education (a PhD in finance from Wharton) and prior work experience (eight years with Goldman-Sachs). Frank had built the investment committee for his family foundation and thought a finance professor would offer a valuable complement to the other members.

Frank introduced the current committee members. Edmund Baker was a retired banker Frank had known for five years; Ivor Campbell was an elder at the church Frank attended---after a career in real estate, Ivor now managed his personal portfolio; Fred, Frank's brother, had retired from a career in insurance and was now becoming interested in investing. Fred and Ivor still lived in Colorado but had Florida condos on nearby Marco Island. This would be the first meeting of the new five person (including Paula) investment committee. The committee's role was to be advisory to the trustees; the two brothers maintained their status as the only Trustees.

## PRIVATE FOUNDATIONS

In the U.S., private foundations are a significant part of the nonprofit sector. Their income is essentially tax free, but they must spend five percent of their assets in grants to other nonprofits each year. The five percent is generally computed based on average

*Include PA Statement!*



investment assets held during the previous calendar year. Private foundations generally do not operate their own charitable activities but rather support such endeavors financially. This type of private funding has served as the catalyst behind programs such as the 911 emergency response system and public broadcasting.

Like many private foundations associated with high-net-worth individuals, The Mogador Trust had a significant position in “founder’s stock,” a concentrated equity position in a large publicly-traded company contributed by a major donor. By some estimates, donor stock represents over 30% of the equity allocations at large foundations. By reducing overall diversification, founder’s stock often significantly increases portfolio risk.

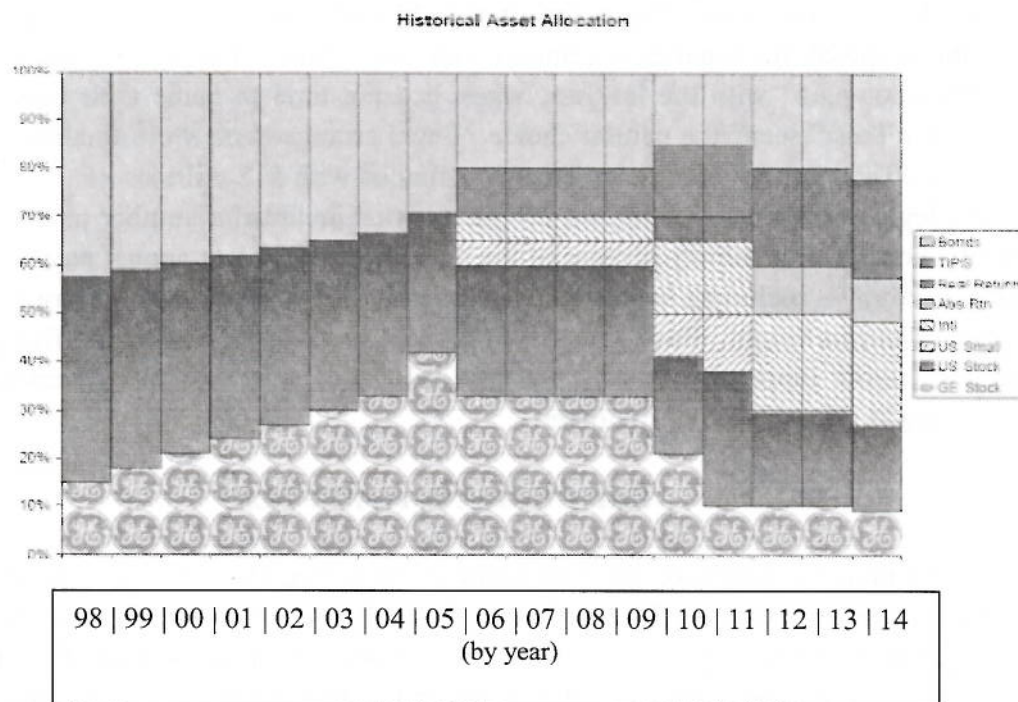
## **MOGADOR TRUST--HISTORY**

The Mogador Trust had its beginnings in another nonprofit, the Sides Foundation, started by Frank and Fred’s father, David Sides. David, a professor and inventor, funded the Sides Foundation with royalties from his patents. The Sides Foundation was a small-scale operation until David Sides’ death in the early 2002 when most of his personal portfolio was bequeathed to the Foundation. This portfolio included a significant allocation to General Electric (GE) stock that David Sides had received when his company was acquired by GE. He held onto this GE stock because he was wary of the possible tax consequences of selling what was a very low-basis stock.

Professor Sides had three children, Frank, Fred, and Chloe. In his will Professor Sides named all three children as Trustees of the Sides Foundation. Initially, the Trustees relied on a local bank’s trust officer to handle the investments. After Professor Sides’ death in 2002, the Foundation’s portfolio consisted of—in almost equal parts—large cap U.S. equity, investment grade bonds, and General Electric stock. The asset allocation policy—specified in a brief letter to the bank—was to split the portfolio between stocks and bonds in a 50:50 mix. This asset allocation policy ignored the GE allocation. In 2006, the Trustees began addressing the need for diversification in two ways—by adding additional asset classes and by reconsidering the GE stock position. After much debate, the Trustees agreed to establish toehold positions in three new asset classes or subclasses— Treasury Inflation-Protected Securities (TIPS), small cap stocks, and international stocks. Discussion about the GE stock continued without much resolution. The overall allocation was to be a 70/30 stock/bond mix. This time, the equity allocation included the GE stock.

Trustee comfort with the additional asset classes increased over the following years. They were aided, no doubt, by attractive relative returns for international equity, small-cap U.S. equity, and TIPS. After protracted discussion, the Trustees were, in 2009, able to agree to a partial solution to the problem of the large founder’s stock allocation—using covered calls to ultimately reduce the position to no more than 10% of the portfolio. They also added a toehold allocation to real estate. They counted real estate as a stock allocation but the overall target allocation remained a 70/30 stock/bond mix. The historical asset allocation for the Trust is depicted in figure 1.

Figure 1: Mogador Trust: Historical Asset Allocation (prior to 2012, allocation is for the Sides Foundation)



Disappointed with the performance of the bank trust officer managing their portfolio, the Trustees switched, in 2009, to a manager-of-managers approach. They engaged an “investment consultant” from the local office of a national brokerage firm to select “best of breed” managers for each of the asset classes. This investment consultant was a squash buddy of Chloe Sides’ husband, who was becoming highly interested in the management of the portfolio.

The national brokerage firm employed by the Sides Foundation restructured in 2012. During the transition, portfolio performance data was hard to obtain and the Trust’s “investment consultant” left the firm to start his own firm. When Frank and Fred Sides finally obtained reliable performance data from the national brokerage firm, they learned the Foundation had underperformed its benchmark by an average of four percent a year over the previous three years. To put that performance in context, they left the bank trust manager for underperforming by one percent per year.

While the three trustees agreed that the national brokerage firm should be “fired”, they were unable to find common ground in terms of who should be retained to manage the Foundation’s assets. For example, Chloe Sides’ husband strongly advocated using his squash buddy, who had established a new investment firm. Frank and Fred found this untenable. They believed this manager was at least partly responsible for the poor performance during the past three years. In addition, they were uneasy about their brother-in-law’s increasing involvement in the Trust’s portfolio management. While on a joint vacation with their spouses in Morocco, the three Sides siblings settled on a solution. The two brothers would establish a new nonprofit which would receive two-thirds of the assets of the Sides



Foundation. Chloe and her husband would become the trustees of the original Sides Foundation and could invest as they wished. Because they arrived at the idea at dinner in Essaouira, Morocco, they called this approach “the Mogador plan.” Although Chloe instantly accepted the proposal, the legal arrangements took some time. Through repeated use of the phrase “Mogador plan” with the lawyers, when it came time to name their new nonprofit, “The Mogador Trust” seemed a natural choice. Legal arrangements were finalized at the end of December 2012 when The Mogador Trust was funded with \$12 million.

The legal documents creating the Mogador Trust included a number of new spending agreements. For example, ninety percent of the required five percent annual payout was to be spent on education—including scholarships in science and business at the Florida university where Paula Douglas taught. Each Trustee (Frank and Fred) could also spend five percent of the required payout (approximately \$2,500 per million of trust assets) on personal causes without having to consult with one another.

## **THE CURRENT PORTFOLIO**

After joining the Mogador Trust investment committee, Paula Douglas discovered that the asset allocation, Investment Policy Statement, and asset manager choices had all been made by another finance professor, previously hired as a consultant for the Trust. Unfortunately, this professor lost interest in working for the trust before completing the work. The approach taken was a broadly diversified one, but some previous categories (small stocks and TIPS) were subsumed into others. Despite all the materials being labeled “DRAFT,” Frank and Fred had adopted the investment program and purchased the mutual funds on 31 Dec 2012. Unfortunately, during the past year no one had been monitoring the portfolio. As a result, all of the income and capital gains distributions from the Trust’s investments had been accumulating in the cash account. The investment committee was formed to remedy the situation. The draft Statement of Investment Philosophy and Investment Policy Statement can be found in appendix 1; the current portfolio is outlined in appendix 2.

## **GOVERNANCE—FIRST INVESTMENT COMMITTEE MEETING**

As their first investment committee meeting got started, Paula learned about the committee members’ different points of view. The two brothers, Frank and Fred Sides, were committed to the current asset allocation but seemed a little unsure of the rationale behind some of the asset classes and investments. After their experiences with the national brokerage firm, they disliked the idea of ever returning to a single manager for the entire portfolio. However, rather than being focused on investment details, they were most interested in preserving the family patrimony. Ivor Campbell liked the degree of diversification in the portfolio, disliked index funds (“guaranteed mediocrity”), thought there were too many managers and firmly believed in growth stocks (“value has had a good run since 2010—it’s time to switch to growth”). Edmund Baker complained about the asset allocation—“There’s too much crazy stuff in this portfolio—in my day, you just invested 60% in stocks and 40% in bonds.” He was firmly convinced that active management was a losing proposition. Baker

would begrudgingly acknowledge that a small allocation (“5 percent at most”) to international stocks made sense.

After the wide-ranging discussion that revealed these preferences, Frank Sides spoke: “We have an immediate and a longer-term problem to solve. First, we need to raise the level of cash to \$600,000 so we can make our grant payments by March. Second, we need to review the portfolio and build a long-term investment program.”

## **APPENDIX 1:**

### **STATEMENT OF INVESTMENT PHILOSOPHY (Draft: Approved July 2012)**

1. The underlying goal of the Investment Policy is to preserve the assets necessary to provide cash flows or otherwise meet the goals that support The Mogador Trust. The secondary goal is to provide cash flows that grow faster than inflation.
2. Time is the great lever in investing, and since the portfolio is invested for perpetuity, investment policy should be geared to long-term results.
3. Historically, stocks produced the highest total returns over time, and consequently have been the best inflation hedge. Historically, bonds provided higher current income, reduced portfolio volatility, and provided incremental growth. More recently, best foundation investment practice includes alternative assets as diversifiers. We assume this will continue in the long term.
4. Invest in the highest ratio of stocks and high-return alternative investments to bonds consistent with return objectives, spending policy and risk tolerance.
5. Diversification across liquid asset classes will be fundamental to the Trust’s Investment Policy.
6. Take advantage of the Trust’s strength of a small Investment Committee. Delegate to portfolio managers with strong records and (notionally) commit to them for 3-5 years. If not indexing, expect benchmark-beating returns. Seek the lowest fees consistent with high-quality portfolio management.
7. This philosophy will require constant discipline and tolerance of interim market fluctuations.

### **INVESTMENT POLICY STATEMENT (Draft: Approved July 2012)**

#### **PURPOSE**

The purpose of this Investment Policy is to assist the Trustees in effectively supervising, monitoring, and evaluating the investment of the Trust’s portfolio. This Investment Policy follows the principles outlined in the Trustees’ Investment Philosophy.

To articulate an effective Investment Policy, an organization must understand the relationship between its investment funds and operating activities. The Trust’s investment funds are central to the current operations of the Trust. Long term, these investment funds



enhance the operational stability of the Trust.

The Trustees seek to balance current needs and opportunities with those of the future—to preserve intergenerational fairness in managing perpetual and long-horizon endowments.

## STATEMENT OF OBJECTIVES

The underlying goal of the Investment Policy is to preserve the assets necessary to provide cash flows or otherwise meet the goals that support The Mogador Trust. The secondary goal is to provide cash flows that grow 5 percent faster than inflation as measured over rolling 5-year periods. The Trustees commits that this policy will require constant discipline and tolerance of interim market fluctuations. Total return is emphasized over income.

## GUIDELINES AND INVESTMENT POLICY

**Time Horizon:** The Trust's portfolio is managed with a perpetual investment horizon.

**Spending Policy:** This Investment Policy Statement covers investment funds; operating and liquidity funds are segregated from investment funds. Annually, the Trustees authorize transfers from the investment funds to the operating funds. In doing so, the Trustees must consider the effect of the transfer upon the continuing viability of the funds; because of reinvestment, a lower spending rate in the short-term leads to higher after-inflation payouts in the long-term. The Trust will spend only the statutory 5 percent required of U.S. private foundations.

**Risk Tolerance:** The Trustees broadly characterize risk tolerance in terms of failure to meet the Investment Policy objectives. The Trustees view tolerance for investment-loss risk as moderate. Given the long investment horizon, the Trust will invest at the highest ratio of stocks to bonds possible, consistent with return objectives, spending policy, prudent diversification (subject to donor constraints) and within risk tolerance. For given risk levels, the Trustees seek the highest return.

**Performance Expectations:** The Trust is adopting a multi-manager approach where the Trustees, with input from non-Trustee Investment Committee members, select managers. The multi-manager approach is in contrast with the prior manager-of-managers approach where a single outside manager is responsible for selecting and monitoring specialty managers. For non-indexed funds, the Trustees expect benchmark-beating returns as measured over 3-5 year horizons at risk levels comparable to the evaluation benchmark. There are no specific tracking error constraints. The Trustees seek the lowest fees commensurate with performance.

**Asset Allocation Policy, Constraints & Rebalancing:** The asset classes considered for the funds reflect the Trustees' overall investment philosophy, risk tolerance and oversight capabilities. Additionally, we provide the following rationale:



Asset Class	Rationale for Holding
Domestic Equity	Enhanced inflation-adjusted returns
GE Common	Trust's interests; preserve patrimony
International Equity	Diversification; enhanced inflation-adjusted returns
Real Return	Diversification; inflation-hedge; current income
Absolute Return	Diversification; enhanced returns
Fixed Income	Diversification; deflation hedge; current income

Overall asset allocation guidelines are as follows:

Asset Class	Target Allocation	Allowable Range
Domestic Equity	20%	± 3%
GE Common	10%	Never bought; sold down to 10% if ≥ 11%
International Equity	20%	± 5%
Real Return	20%	± 10%
Absolute Return	10%	± 6%
Fixed Income	20%	± 1½%

Expected return	7.3%
Expected risk	10.4%

To the extent that these asset allocation guidelines differ from current allocations, the guidelines will be implemented expediently.

The expected returns in the preceding table and the spending policy combine to imply that the Trustees desire, on average, a portion of the investment returns be reinvested. To reiterate, total return is emphasized over income.

Rebalancing will occur at least semi-annually. The asset allocation expressed above is a target allocation; some deviation around the target is expected. Significant tactical asset allocation (or any market timing) is not part of the Trust's Investment Philosophy. To the extent possible, cash outflows for expenditures will be used to adjust the asset mix because they incur only one-way transaction costs. In general, the desirability of rebalancing will be evaluated in light of transaction costs; the allowable ranges were computed to reflect transaction costs.

### Security Guidelines

*Domestic Equities:* For all capitalization U.S. stocks, the evaluation benchmark is the Dow Jones Wilshire 5000. For large capitalization stocks, the evaluation benchmark is the S&P500. For other stocks, the evaluation benchmark is the Dow Jones Wilshire 4500. The domestic equity subportfolio will be split 60/40 between large and smaller stocks; the Trustees acknowledge that the policy asset allocations represent intentional over-weighting of small stocks relative to the total US equity market.

*GE Common:* The investment manager will sell GE shares down to the point that they represent 10% of the Trust portfolio. The timing and implementation of this divestment will be decided by the Senior Trustee, but the divestment should be completed by May 2017.

*Fixed Income:* The fixed income subportfolio will be divided 50/50 between an all-Treasury portfolio and a diversified portfolio. International and high-yield bonds are authorized



for the latter. Average portfolio duration will be less than 8 years (with no duration or maturity restriction on individual bonds). The evaluation benchmark is the Barclays US Aggregate Bond Index.

*International Equities:* The international equity subportfolio will be divided 50/50 between a core portfolio and an all-emerging markets portfolio. The core international portfolio may include international small cap stocks. The evaluation benchmark is a 50/50 blend of the unhedged MSCI ACWI ex-US index and the unhedged MSCI Emerging Markets index.

*Real Return:* The real return approach represents a diversified approach to inflation hedging. At least 25 percent of the real return subportfolio will be invested in inflation-linked bonds. At least 25 percent of the real return subportfolio will be invested in marketable real estate (e.g., REITs). The evaluation benchmark is Consumer Price Index plus 4 percent.

*Absolute Return:* The goal of the absolute return subportfolio is to generate stock-like returns at minimal risk. The evaluation benchmark is Consumer Price Index plus 4 percent.

*Diversification:* To assure a prudent degree of diversification and avoid excessive risk, actively-managed investment accounts shall not exceed the following limits: 1) No more than 10% of the Trust's investments will be in the securities of any one issuer or affiliated group; 2) No more than 4.9% of the outstanding stock of any one issuer.

The GE common stock is not actively-managed and is the exception to this diversification policy. Additionally, fixed income securities issued or guaranteed by the full faith and credit of the United States or AAA-rated securities issued by government-sponsored enterprises are also not subject to this diversification policy.

*Permissible Investments:* The Fund may be invested in publicly-traded common stocks, mutual funds (including exchange-traded funds), convertible bonds and fixed income securities, whether interest bearing or discount instruments, including money market instruments, subject to any restrictions specified in this Investment Policy. Commingled funds may be used, provided that securities held in the commingled fund are permissible investments. Investments in bank or thrift deposit instruments are limited to amounts insured by the appropriate deposit insurance fund. No other securities are permissible investments.

The preceding sentence makes this paragraph redundant, but listing certain prohibited investments may avoid misunderstanding. Absent written permission of the Trustees, explicitly forbidden investments include: common stock in nonpublic corporations, short sales of any type, letter or restricted stock, other non-marketable securities, non-FDIC insured deposits, buying or selling on margin, tax-exempt bonds, private placement bonds, master notes, commercial paper not rated at least A1/P1, obligations rated below investment grade, un-rated corporate bonds, direct placement of mortgages on real property, CMO IO or PO strips, inverse floaters, other floating-rate notes whose coupon does not vary directly with market rates, repurchase agreements against securities which are not permitted to be held in the portfolio, options contracts (other than call options written/sold with the express approval of the Trustees), futures contracts of any kind, commodities, direct investment in real estate (*versus* liquid real estate securities), limited partnerships and master limited partnerships.

Absent written permission of the Trustees, securities owned by the Funds will not be lent to any other party for any purpose.

## **SELECTION, DUTIES AND RESPONSIBILITIES OF MONEY MANAGERS**

The Trustees are responsible for prudently selecting the investment managers, which may



include banks, investment management firms, insurance companies and mutual funds. Each investment manager must adhere to the objectives and policies detailed in all sections of this investment policy and accept fiduciary responsibility. The Trustees seek the lowest fees consistent with high-quality investment management. Subject to this Investment Policy, the investment managers are to have full discretionary security selection authority over the assets assigned. If specialist investment managers are selected, such discretion may be limited by the Trustees to the specialist's asset class; further, the Trustees may designate appropriate evaluation benchmarks for specialist managers. Money managers hired directly will agree to this Investment Policy and their specific investment mandate in writing; mutual fund managers are expected to abide by their prospectus.

### **CONTROL PROCEDURES**

The Funds shall be invested consistent with generally accepted standards of fiduciary responsibility. The safeguards that would guide a prudent expert will be observed. All transactions undertaken for the Fund will be for the sole benefit of the Trust.

*Brokerage Policy:* Brokerage arrangements shall be conducted for the sole benefit of the Trust.

*Custodial Policy:* Custodial arrangements shall be conducted to assure the security of and ensure the best interests of the Trust.

*Performance Monitoring:* Performance is monitored against the appropriate benchmarks and considers risk. The Trustees expect active advice and input from the non-Trustee members of the Investment Committee.

*Clarifications:* In the event of any confusion, users of this Investment Policy Statement should obtain clarification from the Trustees.

*Periodic Review:* The Investment Committee shall review the portfolio at each of its regular meetings. The Investment Committee shall review this document annually.

Deviation
3.46%
2.15%
2.15%
0.39%
0.39%
0.45%
0.24%
0.21%
0.48%
0.48%
-0.23%
0.42%
0.07%
0.28%
0.06%
-1.34%
-0.84%
-0.49%
0.69%
0.69%
-2.71%
-1.23%
-1.23%
-0.95%
-0.33%
-0.62%
-0.68%
-0.39%
-0.30%
0.15%
0.15%
-1.05%
-0.31%
-0.16%
-0.19%
-0.36%
-0.02%
-2.78%
-1.43%
-1.43%
-1.35%
-0.76%
-0.21%
-0.38%
1.16%
1.16%
2.14%
2.14%



**TEACHING NOTE**  
**THE MOGADOR TRUST:**  
**APPLYING INVESTMENT CONCEPTS TO PRIVATE FOUNDATIONS**

Kevin J. Davis, United States Air Force Academy  
William W. Jennings, United States Air Force Academy

**CASE DESCRIPTION**

*The case examines decision making within a private trust. Many of the issues for this small trust are immediately applicable to larger trusts, as well as local and state pension funds. Taking the perspective of finance expert Paula Douglas, students must address asset allocation and the selection of investment managers. Critically, decisions must be made in a realistic environment, where the investment management team has real biases, and limited investment knowledge. In their role as Paula, students will need to navigate political and ethical obstacles.*

*To adequately accomplish this case students must think deeply about the meaning of asset classes, diversification, choosing investment managers, and political and ethical constraints. The case is based on an amalgam of issues the authors have experienced at several small foundations. The case prompts students to integrate a number of investment concepts. Without a classroom discussion, individual students are unlikely to be able to identify many of the issues Paula must address. All the people in the case are fictional, though they are informed by real investment committee members. The case can be taught in two separate one hour segments or one two hour period. Students will require two to three hours of preparation time. The case works best with an MBA audience, but can be used effectively with undergraduates with a bit more input from the instructor.*

**CASE SYNOPSIS**

*Paula Douglas, a finance professor, has been invited to join an investment committee for a small (\$13 million) family directed private foundation. The committee already has four other members, two brothers and two family acquaintances; none of the other four has substantial investment education. The history of the foundation is discussed and the governing documents for the foundation can be reviewed. A spreadsheet lists the foundation's current holdings. As an investments professional Paula would be able to quickly identify a number of significant problems. Critically, Paula, having served on other foundation committees knows that she cannot simply insist that the problems be corrected. She knows that she must understand and deal with the other committee members, helping them to correct deficiencies during what will likely be a multi-year period. Therefore, she needs to identify critical issues that must be immediately rectified, and develop a plan to get to know and educate the rest of the committee.*

## CASE STUDY OBJECTIVES

- 1) Provide students with a real world situation that allows them to integrate a number of investment concepts.
- 2) Help students develop an understanding of the ambiguity embodied by the essential investment term “asset class”; develop student understanding of asset classes as the foundation of diversification and risk control.
- 3) Create an understanding of the issues behind choosing investment managers.
- 4) Get students to understand that the equations and rational solutions offered by their textbook are not useful until they know and understand the people making the actual investment decisions; develop student understanding of the biases and politics that can influence investment decisions.
- 5) Help students develop an appreciation for dynamic money management—since trusts must spend five percent of investable assets each year asset sales occur almost every year; this dynamic mirrors the situation faced by many retirees, which allows for a sidebar discussion on sustainable withdrawal rates.

## RECOMMENDED TEACHING APPROACH

The instructor should start with an open-ended discussion by inviting students to take Paula’s view in addressing the questions from each area below. If possible the main issues should be captured on a board or overhead, organized by area. The teacher should decide which of the questions below will be provided to students with the case. The questions are organized around major discussion areas. Upon request the authors will provide an Excel spreadsheet for the Mogador portfolio, with macros that allow instructors to input new dates for the case, which then result in automatic, immediate retrieval of the fund values on those dates. The references in this case note often contain links at which useful additional materials can be found.

## CASE QUESTIONS:

Taking Paula’s perspective, answer the following questions:

### **Politics and Ethics**

- Does it matter that the brothers are both trustees and committee members?
- Do the actions of the brothers seem ethical? What could go wrong?
- When the Trust moved from a local bank trust officer to national brokers, how did the professional relationship change? What is a fiduciary relationship? Is a consultant a fiduciary? A brother? A broker?
- When a “finance” professional is added, does it result in a more “rational” committee?
- What biases do committee members express?
- How should Paula deal with the biases of the committee members?

### **Asset Classes**

- What is an asset class? What are examples of asset classes?
- In distinguishing asset classes, what characteristics matter? When does an asset become a separate class or a separate sub category?



- Why is the "asset class" definition important?
- What should be done with the GE stock position?
- After a definition of asset classes is agreed upon, how should the committee decide on allocation? The trust's Philosophy Statement calls for investing in the highest ratio of stocks possible "within risk tolerance." How should risk tolerance be determined?

### **Investment Management**

- What is a manager-of-managers (MOM) approach?
- Should the trust use index funds (which, according to Ivor Campbell, lead to guaranteed mediocrity)? Would active management be better?
- What measures should the trust use to judge the performance of their investment managers? How much time should be allowed before making hiring/firing decisions?

### **Current Mogador Trust Portfolio**

- Does the Trust have too many funds (Ivor Campbell comment)?
- Is the Trust diversified? How would you decide?
- Does the current portfolio favor a particular investment style (e.g., value or growth)? Does it favor particular sectors (e.g., healthcare, energy, basic materials, etc.)?
- What percent of Mogador's stock holdings are invested in US based companies?
- In terms of fixed income, does the trust favor a particular level of creditworthiness? What type of fixed income duration is favored?
- What is the yield for the trust's stock portfolio?
- How do the fees the trust is currently paying compare to the averages for the types of funds they hold?

## **CASE DISCUSSION (BY QUESTION AREA)**

The discussion below includes a number of additional questions that can be asked during the class discussion. When a question comes from the list above it is presented in italics.

### **POLITICS AND ETHICS: THE INVESTMENT COMMITTEE**

*Does it matter that the brothers are both trustees and committee members?*

The point of this question can be addressed with a further question: What effect does it have on the committee to have two members with extra power? Students should understand that not separating the trustees from the investment committee is likely to result in a less open discussion at the committee level.

*Do the actions of the brothers seem ethical? What could go wrong?* To begin, it might prompt student thinking to ask, "Why did the brothers want to distance themselves from their brother-in-law?" The problems identified should then be applied to the brothers. For example, was it ethical for the brothers to remove the founder's name from two-thirds of the trust? Was it ethical to allow the original Foundation name ("Sides") to continue to be attached to the one third share? Would their father have approved of having the siblings split?

While there aren't absolute answers for those questions, students should think deeply about the ethics of self-dealing. Self-dealing is defined (see: Self-Dealing, n.d.) as "The

conduct of a trustee, an attorney, or other fiduciary that consists of taking advantage of his or her position in a transaction and acting for his or her own interests rather than for the interests of the beneficiaries of the trust or the interests of his or her clients.” With this definition in mind a number of scenarios should be considered. For example, would it matter if the brothers or Paula had kids at the schools that were beneficiaries of the trust? If their kids applied to the beneficiary schools, would their parents’ status on the trust appear to enhance their chances of acceptance? Would Paula’s role on the committee (which donates to her school) help her get promotions, or keep her job? For all of these questions, the problem is the clear appearance of self-dealing. And where self-dealing is discovered, the IRS imposes substantial penalties.

*When the Trust moved from a local bank trust officer to national brokers, how did the professional relationship change? What is a fiduciary relationship? Is a consultant a fiduciary? A brother? A broker?*

As noted by Fuhrman (2011) investment advisors are required to act as a fiduciary, which means that customers’ needs must be put ahead of their own; fiduciaries must also inform customers of conflicts of interest. In contrast Broker/Dealer advisors need only meet a “suitability” standard. Hence broker/dealer actions are only judged by whether the investments made were suitable, given the customer’s objectives and position. Brokers can, for example, put a customer into a suitable mutual fund with rather high fees, part of which are paid to that broker. This is an important point because students don’t typically think about the relationship they have with investment advisors. It is interesting to ask whether students think the brothers in the case were aware of the changes in their professional relationships when they moved from the bank to the national broker.

*When a “finance” professional is added, does it result in a more “rational” committee?*

Paula clearly adds substantial competence and knowledge, but students need to realize that her expertise won’t necessarily lead to any changes. Having a professional on the committee could even have negative effects. For example, other committee members might assume that their biases don’t matter since the committee has deep investment knowledge—meanwhile the finance person only has one vote, and is often marginalized by being accused of being too “academic.” Second, the presence of an investment academic will cause defensiveness from those who believe they “know the right answers” in terms of investing.

*How should Paula deal with the biases of the committee members?*

As noted for the previous question, Paula’s expertise is likely to be marginalized or create defensiveness among committee members. Solutions to Mogador Trust issues that require significant changes may seem obvious to an expert, but these solutions are rarely embraced by non-experts. Instead, Paula will probably need to display both social skills and patience. Trustee (human) comfort in the face of change is best accomplished slowly. Hence, changes in investment classes, style, management, and allocation should be accomplished in steps. The toehold approach is lightly discussed in the case and over time has helped the brothers become more comfortable with changes in the trust’s investments. This section can be closed with a discussion about how members of investment committees should be selected.

## ASSET CLASSES AND DIVERSIFICATION

*What is an asset class? What are examples of asset classes?* Answers to these questions will probably start with professional definitions. Investopedia (see: Asset Class, n.d.), which is



often used by students, provides typical definition: an asset class is “a group of securities that exhibit similar characteristics, behave similarly in the marketplace, and are subject to the same laws and regulations. The three main asset classes are equities (stocks), fixed-income (bonds) and cash equivalents (money market instruments)”

The Financial Times (FT) (see: Definition, n.d.) provides a similar definition, suggesting that an asset class will “react similarly in different market conditions.” Further the FT definition notes that asset classes tend to have similar rules and laws. FT lists stocks, bonds, and cash equivalents as assets classes, with real estate, commodities and derivatives as, possibly, three additional classes.

Brinker (see: Six Major Asset Classes, n.d.) states that there are six asset classes: 1) Domestic Equity; 2) International Equity; 3) Fixed Income; 4) Absolute Return; 5) Real Assets; and 6) Private Equity.

*In distinguishing asset classes, what characteristics matter? When does an asset become a separate class or a separate sub category?*

This question asks students to dig a little deeper. There are a number of characteristics to consider. For example, for stocks should growth and value separate constitute separate classes? Invite students to look at a copy of the Callan Periodic Table of Investment Returns (see: Callan Periodic Table, n.d.) for a visual demonstration of how different investment styles can exhibit very different characteristics year after year. The teacher can pause here to review the importance of style—which has, over the past 85 years—provided very different returns. In closing this question, the instructor can look back at the previous question and ask whether investment advisory firms like Brinker really believe there is an all-inclusive “International Equity” asset class. More specifically should investors really expect MSCI Developed Markets and MSCI Emerging Markets to behave similarly?

*Why is the “asset class” definition important?*

Diversification, a critical investing axiom, depends on allocating funds to different asset classes. Without reliable definitions of asset classes, how could we gauge diversification? At this point the instructor should remind students of the importance of correlation coefficients, an essential concept of MPT and diversification. Correlation coefficients provide excellent clues in terms of whether assets “behave similarly”. There are many sources on the internet for correlation coefficients (generally listed under “capital market assumptions”). See for example, Horizon Actuarial (see: Survey of Capital Market Assumptions, 2013; p11), which lists the correlation coefficients for 16 different asset classes.

The Yale Endowment provides a solid close to this section. The instructor should start by noting the outstanding investment results the Endowment has achieved. From 1992-2012 the Endowment earned 13.7% per year; from 2002 to 2012, the Endowment earned 10.6%, 4.4% higher than US stocks (Seawright, 2013). Instructors can then move from the Yale’s incredible success to their surprising definition of asset classes. Specifically, according to Yale, “the definition of an asset class is quite subjective, requiring precise distinctions where none exist.”(Yale Endowment, 2013, p.5) The Yale Endowment report identifies eight asset classes and provides current allocations and target allocations: 1) Absolute Return, 14.5%, 18.0% (exploit market inefficiencies via two categories, event-driven and value driven; designed to provide significant diversification; 2) Domestic Equity, 5.8%, 6.0%; 3) Fixed Income, 3.9%, 4.0%; 4) Foreign Equity, 7.8%, 8.0%; 5) Natural Resources, 8.3%, 7.0%; 6) Private Equity, 35.3%, 35.0%; 7) Real Estate, 21.7%, 22.0%; 8) Cash, 2.7%, 0.0%.



*What should be done with the GE stock position?* Founders stock is a typical trust or endowment problem. Having just covered asset classes and diversification, at this point some students will quickly see that this substantial stock position creates a diversification problem, which increases portfolio risk. It is useful to note that behavioral finance suggests that heirs have a natural tendency is to hold what was inherited, continuing the original error. As discussed in the case, the founder, David Sides, erroneously seemed to think that selling the GE stock would have tax implications even after the stock was placed inside the trust. As a sidebar it might be useful to inform students that even for stock that isn't in a trust and is simply inherited, the basis is reset upon the death of the donor—hence no capital gains are ever due on the additional value that was achieved during the life of the donor. Students should also realize that private foundations are generally tax exempt.

- *After a definition of asset classes is agreed upon, how should the committee decide on allocation? The trust's Philosophy Statement calls for investing in the highest ratio of stocks possible "within risk tolerance." How should risk tolerance be determined?* Since different asset allocations create different levels of risk, students need to understand that risk tolerance drives much of the asset allocation decision. However, this simply leads to the second part of the question: how is risk tolerance determined? Most investment texts have short discussions on risk tolerance; many also have short risk tolerance questionnaires. Students can also be shown some of the questionnaires or surveys that can be found online. Examples include Vanguard's (see: Investor Questionnaire, n.d.) and another published by Rutgers (see Investment Risk Tolerance, n.d.).

After discussing the basic notion of risk, for master's level students, the teacher can point out that these kinds of surveys are meant to inform the portfolio construction equation found in their texts. For a given risk tolerance, these equations allow professionals to determine what percent of assets should be held in risky assets (e.g., percent in risky portfolio =  $(E(r_p) - r_f) / A\sigma_p^2$ ). For undergraduates it is useful to briefly discuss the existence of such methods.

## PORTFOLIO INVESTMENT MANAGEMENT AND PHILOSOPHY

The discussion of asset classes leads to overall investment management. Once the committee has decided on asset classes and allocation, they will need to decide how to execute the plan. The politics and ethics discussion also informs the committee's selection of investment managers. Specifically, the committee needs to decide who will manage the trust's assets. For example, should the trust simply index into each asset class? Should the committee select active funds itself? Or should an overall investment advisor or manager be chosen to find the best active managers for each asset class.

*What is a "manager-of-managers" (MOM) approach—why would it be used?*

The definition used by Investopedia (see: Manager of Managers, n.d.) is typical: a manager-of-managers: "hires professional investment managers..." Further, "the MOM tracks the performance of each investment manager and has the power to fire ineffective managers and then hire replacements on a client's behalf." Hiring a MOM suggests that no investment professional can master every asset class. Hence the MOM searches for the best managers in each of the chosen asset classes. Of course a client can instead believe that there are single investment portfolio managers who are quite capable of making all asset class decisions.

*Should the trust use index funds (which, according to Ivor Campbell, lead to guaranteed mediocrity)? Would active management be better?* It helps that Warren Buffett wrote in his



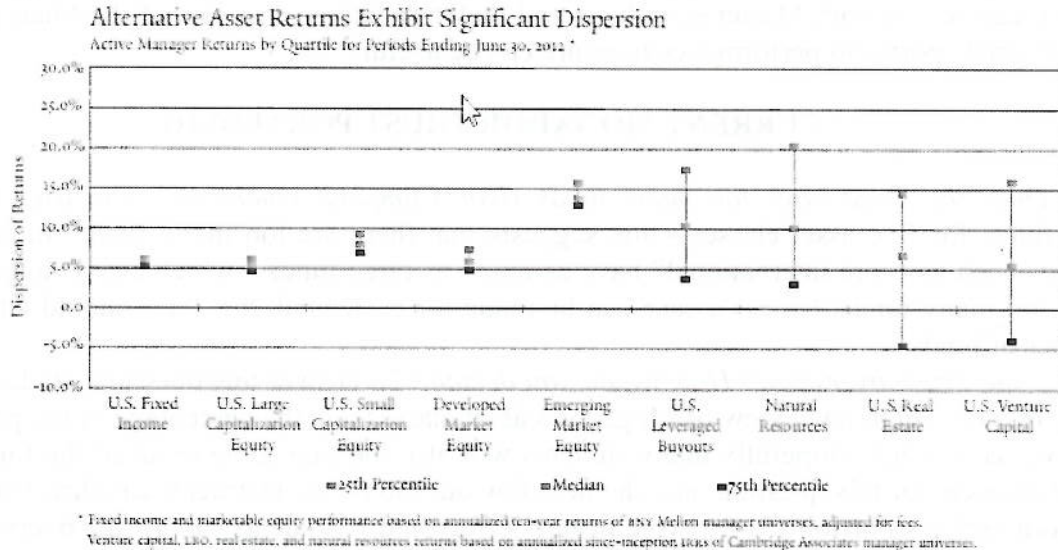
2013 Berkshire letter (Buffett, 2014, p.20) that he has provided the following direction to the trustees of his future estate fund: “My advice to the trustee couldn't be more simple: Put 10% of the cash in short-term government bonds and 90% in a very low-cost S & P 500 index fund. (I suggest Vanguard's.) I believe the trust's long-term results from this policy will be superior to those attained by most investors — whether pension funds, institutions or individuals — who employ high-fee managers.”

After spending a minute or two discussing indexing recommendation from the “best investor of all time” it is useful to move on to one of the best performing endowments.

Students often continue to insist that there are investors who can regularly beat indexed domestic equity returns. At this point the discussion should be widened. Specifically, students should be asked if they believe that active management is the superior route for every asset class. If not, students should be asked to take a position in terms of which asset classes should be indexed and which should be actively managed. After collecting a few opinions the instructor can return to the Yale Endowment which, as the instructor will have already discussed, has bested the index of common stocks for a number of years.

In their annual report, Yale discusses how they make active versus indexing decisions. Their investment committee and analysts start by examining the distribution of returns among active managers of specific asset classes. Where they find wider variance between managers, Yale believes inefficiencies exist which can be exploited by managers with superior skills. Figure 1 below (Yale, 2013, p.10) graphically displays the variance found across nine assets classes.

Figure 1: Manager Return Variance across Asset Classes



After discussing this figure, students should again be asked whether the Mogador Trust should index any of its asset classes.

In closing the indexing/active discussion a comment from Yale’s superstar Chief Investment Officer, David Swenson, is instructive:

“At the active end of the spectrum, you’ve got institutions like Yale and Harvard and Princeton and Stanford and others, who’ve really built high-quality investment teams that have a shot at making consistently good active management decisions. But there’s a vanishingly small



number of such investors. Those on the passive end of the spectrum have figured out that they don't know enough to be active. The passive group is not nearly as big as it should be. Almost everybody should be there.” (Hettena, 2009)

*What measures should the trust use to judge the performance of their investment managers?*

Benchmarks should come up fairly quickly. However, students rarely understand just how precise benchmarks should be. For example students often defer to benchmarks like the S&P 500 index or Barclays Capital Aggregate Bond Index. There is a need to ask them what they think is in these indices—and how an investment manager can beat these indexes year after year. A discussion of how the Barclay’s Index (see: Global Aggregate Index, n.d.) is constructed can be very helpful. Quickly focusing on the composition, issue quality, and duration of the index allows students to understand that different choices on these dimensions could create a very favorable comparison, one that could make a bond manager appear quite expert.

*How much time should be allowed before making hiring and firing decision?* It is important for students to understand that even after an appropriate benchmark is found it can take a long time to determine the quality of an investment manager. One way to help students understand this is to ask what percent of managers in the top 25% of funds over the previous five year period are likely to be in the top 25% over the next five years. If performance was completely random, one would expect 25% of the top managers to be in the top 25% over the next 5 years. However, studies show a result that is even weaker. For example, a Segal Rogerscasey (Past Imperfect, 2014) analysis found that of the top 25% of managers from 2003-2007, only 11 percent were again in the top 25% from 2008-2013. A further discussion of this result can help students to better understand how to apply statistics to investing. Finally, as a common measure, for both Master’s students and undergraduates, a review of the Sharpe Ratio as an appropriate portfolio performance measure can be useful.

## **CURRENT MOGADOR TRUST PORTFOLIO**

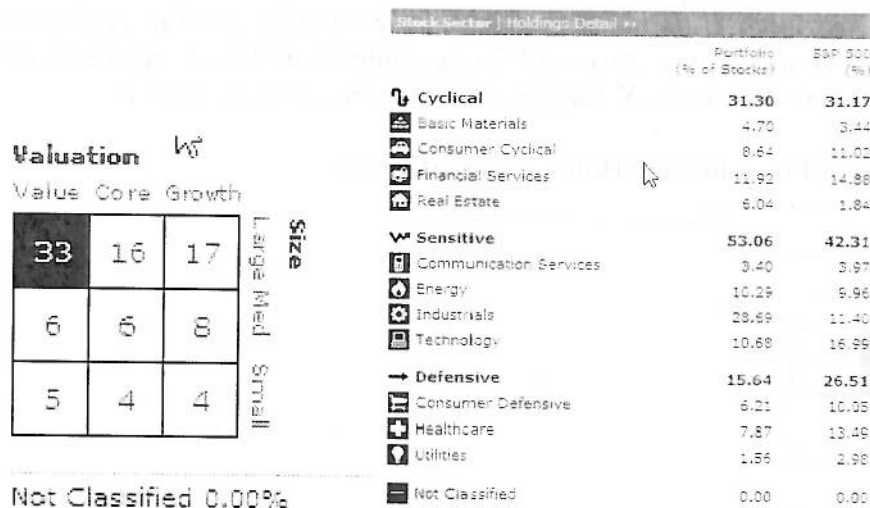
- *Does the Trust have too many funds (Ivor Campbell comment)?* The trust has 26 separate funds for five asset classes—this suggests that there are too many funds. In addition sub-classes such as “core international” have as many as three funds—which again suggest that there are too many funds. Unless a case can be made for each fund, the Trust should cut down the number of funds.

- *Is the Trust diversified? How would you decide?* To answer this question, students will generally rely on a high level view of Mogador’s asset classes and the percentage of the portfolio that is invested in each. Hopefully many students will also look up some or all of the funds. To get better answers for this question, and the next few questions, the instructor can direct students to use Morningstar’s Portfolio X-Ray (see Instant X-Ray, n.d.). Students can get the overview for free; they can sign up for a free two week trial to get the full results; or they can register as a guest at T Rowe Price (see: T. Rowe X-Ray, n.d.) and get the full X-Ray results for free. The instructor could also just introduce this tool to the class by using the charts in the figures below to prompt further discussion.

- *Does the current portfolio favor a particular investment style? (i.e., value or growth); does it favor particular sectors? (i.e., healthcare, energy, basic materials, etc.)* Students aren’t likely to have a good answer for this question without using the X-Ray tool. Figure 2 below shows the output from X-Ray:



Figure 2: Morningstar Style Box and Sector Classification of the Mogador Portfolio



From figure 2 we can see that the trust's current equity holdings favor value over growth (33+6+5=44% Value versus 17+8+4=29% Growth). It is also clear that the trust currently favors "sensitive" sectors, especially "industrials" since its holdings in those sectors strongly exceeds the percentages they represent in the S&P 500.

- What percent of Mogador's stock holdings are invested in US based companies? Without X-Ray students are likely to depend on the percentage listed under the domestic equity and foreign equity assets classes listed by the Mogador Trust. Using X-Ray we find the following:

Figure 3: Mogador Equity Holdings by Geographic Area

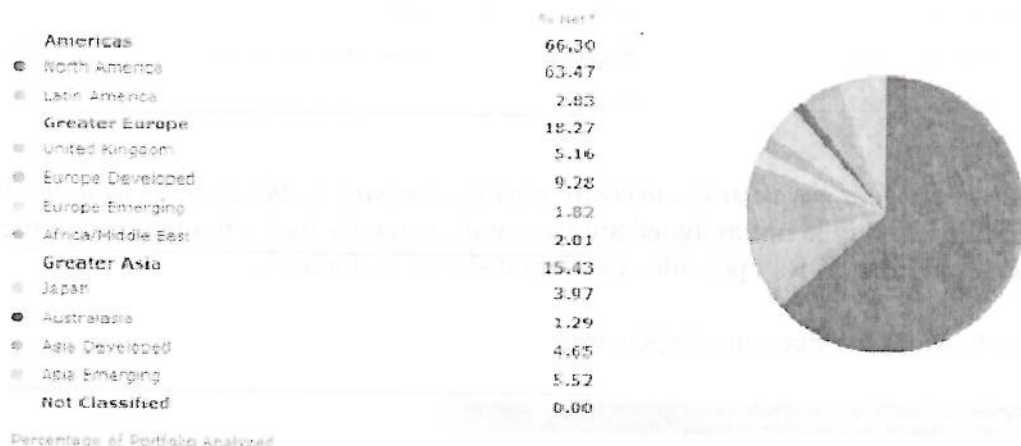


Figure 3 shows that almost two-thirds of Mogador's equity is US based. The instructor should pause here and ask whether diversification depends on which country a company is based in, or where the company's profits are generated. The instructor can ask students to estimate the percent of S&P income that is generated outside US borders. According to Ritholtz (2014), 50%

of income for S&P 500 companies comes from overseas. Given this statistic, students should think about what it means to diversify internationally.

- *In terms of fixed income, does the trust favor a particular level of creditworthiness? What type of fixed income duration is favored?* Some students will look up the fixed income funds in order to answer this. However, X-Ray provides a more complete answer.

Figure 4: Mogador Fixed Income Holding Classification

Interest Rate Sensitivity			Credit Quality
Ltd	Med	Ext	
0	0	14	
0	37	21	
0	4	0	

No: Classified 23.43%

Figure 4 allows students to see that Mogador has decided not to hold any Ltd Fixed Income (<3.5 years duration), and seems to favor Medium Quality creditworthiness (less than AA-, equal to greater than BBB-). (The rules governing Morningstar's fixed income style box can be found at: [http://morningstar.com/invGLOSSARY/morningstar\\_style\\_box.aspx](http://morningstar.com/invGLOSSARY/morningstar_style_box.aspx)).

- *What is the yield for the trust's stock portfolio?* This question shouldn't be assigned without also assigning X-Ray since the computation would be quite time consuming. X-Ray provides the result in figure 5.

Figure 5: Overview of Mogador Trust's Equity Holdings

	Your Portfolio	Relative to S&P 500		Your Portfolio	Relative to S&P 500
Price/Prospective Earnings	14.37	0.90	Projected EPS Growth - 5 yr %	11.14	1.09
Price/Book Ratio	1.81	0.80	Yield %	2.06	1.17
Return on Assets (ROA)	5.83	0.73	Average Market Cap \$mil	23,059.46	0.38
Return on Equity (ROE)	15.12	0.75			

- *How do the fees the trust is currently paying compare to the averages for the types of funds they hold?* If X-Ray is not assigned students will generally look up a number of the funds, and try to gauge the fees. X-Ray provides the output shown in figure 6.

Figure 6: Mogador Fees and Expenses

Fees & Expenses   Holdings Detail ++	
Average Mutual Fund Expense Ratio (%)	0.67
Expense Ratio of Similarly Weighted Hypothetical Portfolio (%)	1.04
Estimated Mutual Fund Expenses (\$)	76,709.27
Total Sales Charges Paid (\$)	0.00



According to figure 6, Mogador's fees are below average. At this point the instructor should ask students how important fees are. For example, even Morningstar studies (Kim, 2010) have found that fees are the best predictor of mutual fund performance.

## SUMMARY

As they take Paula's perspective to answer the case questions, students often start by thinking she just needs to apply standard investment concepts. As some of the concepts are considered more deeply (e.g., asset classes, investment management), students begin to realize that there is a lot of ambiguity surrounding these concepts. This realization is often met with a deeper commitment to rationality--if trust governance is set up around best practices and processes, most of the ambiguity can be overcome. This is the type of approach taken by researchers such as Clark and Urwin (2007). They advise committees to adopt "best practices", including the hiring of only "highly qualified" people for investment committees and a commitment to "clarity of mission" and "clearly specified responsibilities" (Clark and Urwin, p9). It is important for students to realize that best practices are not what drive a typical trust organization. O'Barr and Conley (1992) demonstrated this disconnect with their study of nine large funds (three state pension funds and six large private funds). As they observed the governance of these funds, O'Barr and Conley found that "economic and financial analyses do not dominate investment decision making"; instead "fund executives appear to be motivated more by the kinds of cultural influences that drive less consequential decisions. These include the quirks of institutional history and corporate politics, the desire to displace responsibility, and the demands of maintaining smooth personal relationships" (O'Barr and Conley, p.21). In short, the problems at Mogador are hardly unique.

## REFERENCES

- Asset Class. (n.d.). In Investopedia. Retrieved from:  
<http://www.investopedia.com/terms/a/assetclasses.asp>
- Buffett, W.G. (2014). 2013 Berkshire Hathaway Letter. Retrieved from:  
[http://www.berkshirehathaway.com/letters/2013ltr.pdf?\\_ga=1.214683679.985717203.1396858906](http://www.berkshirehathaway.com/letters/2013ltr.pdf?_ga=1.214683679.985717203.1396858906)
- Callan Periodic Table of Investment Returns. (2014). [Graph illustration of Annual Returns for Key Indices Ranked in Order of Performance (1994–2013)]. Callan Associates. Retrieved from:  
<http://www.callan.com/research/download/?file=periodic%2ffree%2f757.pdf>
- Clark, G., & Urwin, R. (2008). Best-practice pension fund governance. *Journal Of Asset Management*, 9(1), 2-21. doi:10.1057/jam.2008.1
- Definition of Asset Class. (n.d.). Financial Time Lexicon. Retrieved from:  
<http://lexicon.ft.com/Term?term=asset-class>
- Fuhrmann, Ryan. (2011). Choosing a Financial Advisor: Suitability vs. Fiduciary Standards. Retrieved from <http://www.rationalanalyst.com/?p=2590#more-2590>
- Global Aggregate Index. (n.d.). Barclays. Retrieved from:  
[https://ecommerce.barcap.com/indices/show?url=Home/Guides\\_and\\_Factsheets](https://ecommerce.barcap.com/indices/show?url=Home/Guides_and_Factsheets)  
(click on Global Aggregate Index)

- Hettena, Seth. (2009). Yale's Financial Wizard, David Swensen, Says Most Endowments Shouldn't Try to Be Like Yale. ProPublica. Retrieved from:  
<http://www.propublica.org/article/yales-financial-wizard-david-swensen-says-most-endowments-shouldnt-try-to-b>
- Instant X-Ray. (n.d.). Morningstar, Inc. Retrieved from:  
<http://portfolio.morningstar.com/Rtport/Free/InstantXRayDEntry.aspx>  
 (this is the portfolio entry page; after the Mogador portfolio is entered simply click on "show instant X-Ray")
- Investment Risk Tolerance Quiz. (n.d.). Rutgers University. Retrieved from:  
<https://njaes.rutgers.edu/money/riskquiz/>
- Investor Questionnaire. (n.d.). The Vanguard Group. Retrieved from:  
<https://personal.vanguard.com/us/FundsInvQuestionnaire>
- Kim, Jane J. (2010, Aug, 9). "Low Fees Outshine Fund Star System." Wall Street Journal. Retrieved from:  
<http://online.wsj.com/news/articles/SB10001424052748704268004575417614035814700>
- Manager of Managers. (n.d.). In Investopedia. Retrieved from:  
[http://www.investopedia.com/terms/m/manager\\_of\\_managers.asp](http://www.investopedia.com/terms/m/manager_of_managers.asp)
- O'Barr, W. M., & Conley, J. M. (1992). Managing Relationships: The Culture of Institutional Investing. *Financial Analysts Journal*, 48(5), 21-27.
- Past Imperfect: Why Using Past Performance as the Primary Indicator of Future Performance Is a Flawed Strategy. (2014). Investment Insight, Segal Rogerscasey. Retrieved from:  
[www.segalrc.com/Cpubs/II/pastper12014.pdf](http://www.segalrc.com/Cpubs/II/pastper12014.pdf)
- Ritholtz, Barry. (2014, Feb 26). Even Warren Buffett Can Be Wrong: Ritholtz Chart. Bloomberg View. Retrieved from:  
<http://www.bloombergview.com/articles/2014-02-26/even-warren-buffett-can-be-wrong-ritholtz-chart>
- Seawright, R.P. (2013) Is the Yale Model Past It? Above the Market. Retrieved from:  
<http://rpseawright.wordpress.com/2013/03/22/is-the-yale-model-past-it/>
- Self-Dealing. (n.d.). In The Free Dictionary. Retrieved from:  
<http://legal-dictionary.thefreedictionary.com/Self-Dealing>
- Six Major Asset Classes. (n.d.). Brinker Capital. Retrieved from:  
[https://clients.brinkercapital.com/Brinker/Portal/Web/CMS/Images/An\\_Intro\\_to\\_Brinker\\_Capital's\\_Major\\_Asset\\_Classes.pdf](https://clients.brinkercapital.com/Brinker/Portal/Web/CMS/Images/An_Intro_to_Brinker_Capital's_Major_Asset_Classes.pdf)
- Survey of Capital Market Assumptions. (2013). Horizon Actuarial Services. Retrieved from:  
[http://www.horizonactuarial.com/blog/uploads/2013/09/Horizon\\_CMA\\_Survey\\_2013\\_v0911.pdf](http://www.horizonactuarial.com/blog/uploads/2013/09/Horizon_CMA_Survey_2013_v0911.pdf)
- T. Rowe X-Ray. (n.d.). T. Rowe Price. Retrieved from:  
<http://individual.troweprice.com/public/Retail/Planning-&-Research/Tools-&-Resources/Investment-Planning/Portfolio-X-Ray> (register as "guest")
- Yale Endowment. (2013). Yale University Investments Office. Retrieved from:  
[http://investments.yale.edu/images/documents/Yale\\_Endowment\\_12.pdf](http://investments.yale.edu/images/documents/Yale_Endowment_12.pdf)